

Zolnowski (V.)

THE  
Methodical Application of Water  
IN THE  
TREATMENT OF DISEASES  
WITH  
SPECIAL REMARKS ON FEVER, THE LATEST INVESTIGATIONS  
RELATIVE THERETO, AND  
OF ITS TREATMENT BY MEANS  
OF THE SAME REMEDY.

BY V. ZOLNOWSKI, M. D.



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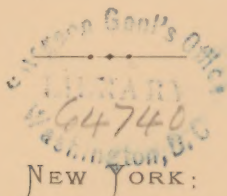
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*Presented  
by Dr. J. C. Peters*

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## PREFACE.

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It is the invariable custom with those who follow the well meant but short-sighted recommendations of some physicians in certain classes of disease, to keep the chest, neck and throat, continually wrapped and bundled up, and thus as they suppose protected from all danger. Following the same advice they usually remain confined in their dwellings, living in closed unventilated rooms, and coming but seldom into contact with the outer and invigorating air, whose healthful oxygen would prove so beneficial. Such persons think it somewhat strange, when they first enter upon a course of hydropathic treatment, that its results are not so instantaneous as their wishes, and sometimes even seem to produce aggravated effects. They forget that its results are slow in making their appearance, especially in those cases that have gone the whole round of systems, and have finally come to the water cure as a last resort. Indeed in the course of a week or fortnight, the patient's system is becoming changed under the influence of the remedy; perhaps being seemly worse, but growing really better, and becoming more robust, hardy and capable of resisting cold air.

It appears that now the time is passed, when learned physicians have an aversion to the application of water. Surgeons, midwives and oculists,

have overcome that aversion long ago, and it was just those branches of the healing art, that gave the impulse to attempt the system of water treatment, further to develop and establish the laws under which the water can have a full beneficial effect.

We have really only two classes of healing remedies, one exciting and the other quieting, all others that do not belong to these categories of remedy, have no decided effect.

In regard to the effect of so called organic remedies upon certain organs and systems, these can only be expressed, through excitement and quietment. We know that the *diuretic* excite the kidneys and through that increase the urinary excretion. The *cathartic* excite the intestine and increase its excretion; we know that the *narcotic*, quiets the nervous system, as well as produces a somnolent effect, upon the sensorium. But we know also that the stimulating remedies, excite the nerves and the system of the vessels, and produce more intense activity of these. The same effect can be obtained also by the water treatment, without fear of any extra effect, and this only by the physical act of reducing the temperature and by its action upon the circulation of the blood. The water cure method is qualified in all cases and diseases, with the exception of those in which the organic excitement and activity will not allow any reaction.

We can obtain the exciting and the quieting effect by the proceedings of the water cure system alone; so by uniting these proceedings, we can constitute two methods.

The one the *exciting* and the other the *quieting*.

We can also obtain by water treatment in the most cases, what by the other system of remedies, will, very often only be obtained in theory. The difference between these two methods is this, that success by the water treatment is sure, and by the other only problematic. By water treatment, we can produce *exciting* and *quieting* effects, upon each organic system and each organ; by the other only upon one system and organ. By water treatment, the action can be confined according to one's own judgment, which cannot be done by the other—and at last, by water treatment, we need not fear any extra action, that always must be necessarily involved by combining the use of the other remedies, and that result cannot be shown by the usual treatment.

By these two principal methods, we are able to control all diseased organic action, because each of these methods have great extent and large scope. The excitement and quietment, can take place in the most varied degrees, and depends on the coldness and quantity of water, on the duration, repetition and the different ways of effect. The water cure treatment attains its results by the outer application of water (as has been shown physiologically), especially through the nervous system, so that the irritability of the nerves and the nervous action, are those factors which thereby receive value, but also the organic contraction and expansion, the molecular action, constitute a great part of it. Taken into the circulation and equalized with its temperature with the blood, the water acts by its quantity



in increasing the pressure as a solvent through its fluid nature, and as a constituting body to all organs and fluids, it takes an important part in the progressive metamorphosis, and serves as a great vehicle of nourishment and absorption, and therefore of the entire change of matter.

The best proof of acknowledgment in regard to the water treatment is given by Felix Niemeyer, in his book (*Special Pathologie and Therapie*), which appeared in 8 editions, and now translated into English, and is acknowledged as authority by most all the medical faculties. The author highly recommends the application of water in most diseases, and according to the statement of his brother Paul Niemeyer, shown in his work of 1874, (*Physical Diagnostic*, p. 136,) Felix Niemeyer, liked best to treat with water and house remedies; and this confirms the opinion of Frederick Hoffman, one of the most eminent physicians of the past century, who said, that if there ever was a universal remedy, whose effects were truly equal and innoxious in themselves, without any disordered and demoralizing results, that remedy was water. But to obtain the full benefit of its healing power, the water must be applied under the attentive care, and the finished skill of the experienced physician.

THE AUTHOR.



## METHODICAL APPLICATION OF WATER IN DISEASES.

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A combination of the different forms and different kinds of water application for a certain purpose, to remove or allay the disease, gives us a conception of the different methods. These will always have to be guided by the appearance of the diseases. They will experience numerous changes according to their increase and decrease, and change of character. The art of technical treatment depends on the care, and promptness with which these methods are made to conform to the disease. This technic undergoes in each special case, such manifold modifications and it owes very much to the inventing spirit of the physician, who equipped with the physiological understanding, will attain the same results by the different applications of the single simple remedy, and often produce effects through certain modifications, which another could not bring about successfully. We have to observe the effects of the application of water, as exciting and increasing the motion and moderating and decreasing the same. But since the change of matter, can be controlled by the application of water, as well externally, as internally, we

therefore have to establish two principal methods, as regards the place of action:

1. The outer.
2. The inner.

Excitement and quietment of the organic functions, can be produced by two methods. The outer surface however, offers a large sphere for action and the effect on this, will stand in direct proportion to its extent. It will therefore be the best for treatment, and still more for this reason, since with the inner method, the individual effects of water application are more difficult to be kept up independently, whether exciting or quieting, because after the succeeding irritation, the remedy will have to be discontinued, after it has discharged its duty, but if this remedy can not be continued, the second effect of the water, namely quietment, will then have to be applied.

The absorbed water will be embodied with the organism, and it will, by coming into the bloodflow, create a separate independent result, which causes an important accelerating influence on the regressive metamorphosis.

The inner method may therefore alone either assist the outer, the latter appearing as the cardinal method, or else the inner method, becomes the cardinal one, and the outer is subordinate helping it. The outer method attains a much higher result, because the organism is charged with no strange matter, it only acts on the surface of the body, by the immediate contact of the remedy, and therefore especially shows its absolute value, when the admin-

istration of healing substances, has by some causes become impossible. Finally the outer method can be accomplished with much more precision and certainty.

This method can act more efficiently, because in the excitement of the nerves, which we cause by the action of the water, we possess the test remedy, showing in what manner and to what extent, the water can be made use of. For the above there is one outer, peripheric-acting method and may be regarded as :

1. **Exciting.**

2. **Quieting.**

1. *The Exciting.* Its nature depends on the increase of the organic change of matter. The application of water must be done here speedily and rapidly, and the degree of temperature, proportioned according to the irritability. The less the irritation is, the lower must be the temperature of the applied remedy. Generally the lower degrees are used, seldom the middle. The withdrawal of warmth must be very small in amount, and correspond with its formation. This purpose is attained by short washes, rainbaths, sprinklings and abrasions, of the duration of several minutes. These processes must be combined with frictions of the skin, in order to increase the irritation. The administration of water, can only be permitted according to necessity. This method assumes a higher value in its application for chronic, dyscrasic diseases, and for local obsolete processes, which have left material changes and dis-

turbances of the functions. Here it is necessary to increase the functions of most systems and organs; also to improve the state of the blood, by the secretion and reception of new nourishment, and by increasing and strengthening capillary action, to remove the change of matter in the diseased organs, and to provide for removal of the residues of the diseases. As an intense excitement of the nervous system is only possible by an increased irritation of the same, hence this is very often increased artificially by warming and perspiring in woolen blankets, and then the excitement is introduced by short processes, in the cold tub, or under the douche or cold sprinklings, of a few minutes duration, with lower degrees of temperature, in which a constant change of fresh strata of water, aids the effect. The locally applied exciting method consists of local baths, short sprinklings, followed by rubbing, in order to aid the irritation. With this method the active movement of the muscles is especially recommended, to restore the warmth, and the quicker this is done, the more favorable the success.

2. *The Quieting* method has for its object the confinement of the general, as well as the local prominent appearances of the motion of change of matter, by the *withdrawal of warmth*, and the recovery of the *normal* degree. This method has two forms, the stronger *antiphlogistic*, and the weaker *the sedative*. In the antiphlogistic method the withdrawal of warmth must reach such a degree, that the sum of the material motions, that appear to the mind as functions of the nervous system, and indicate the



quantitative value of warmth, seem under the normal. For this reason; because in the quick return of the excited change of matter, motion and formation of warmth, the system and organs cannot gain time enough to recover themselves, and replace the consumption of matter.

The duration of this process is, when a large part of the periphery of the body is treated, one-half to two hours.

In this antiphlogistic method, the organic matter is retained, its molecular motion is directly circumscribed, and this confinement shows itself in diseased action of the nerves and system of vessels in general, and of this or that organ in particular.

In this method the withdrawal of warmth must be done slowly, in the shape of a slow increasing cooling, because by the quick loss of warmth, the nerves are irritated, and the exchange of matter is increased. In the beginning this can only be done by the use of the middle degrees of temperature, first, until the excitement is diminished, when lower degrees, even to ice-cold, can be applied locally. The withdrawal of warmth must here only take place in employing moderate quantities of water, general or local, in the shape of half-baths, sitzbaths and packs, and wet frictions, (rubblings,) washoffs, local wet sheets, baths and compresses, which must be changed frequently, so not to become warm. Each of these processes must be continued, till the normal warmth has been made permanent. Each process must be again commenced, if the warmth has attained an abnormal higher degree, such as occurs in many fever diseases,

sometimes in a very short time, sometimes after a few hours.

This withdrawal of warmth is aided by the administration of water in the shape of enemata and drinks, the latter of which in the beginning of the diseases, when the congestions in the organs have attained a higher degree, are to be prescribed with caution and limited in quantity, because these congestions increase with a larger administration of water. When the stagnation first sets in, the pipheric capillaries and the organs commence their secretions, and then the increased administration of water will be of decided benefit.

The *sedative* method is recommended, when the nerves are greatly excited. The formation of warmth is here less intense, and its loss is replaced slowly. Here sometimes the middle or higher degrees of temperature can be chosen; but the duration may not, in large processes, scarcely exceed several minutes. When the temperature has fallen below the normal, and with it there is a diseased increase of the functions, especially the pulse, then the water procedure must be interrupted, and when the abnormal increased warmth of the body first appears, then it may be commenced anew.

The internal centrally acting method is one, which asserts itself as an independent one, by the manner of its action on the retrograde transformation of organic substances. Here the water enters the circulation, and acts mechanically by extending the capillaries and penetrating the tissues, in order to loosen the coherence of the organic structure, dis-

solves matter, and by increased action of the respiration, introduces new relations and oxydations of the same matter, then passes with them chiefly through the kidneys as urea, salts, mostly chlorids, then through the lungs as vapor, impregnated with carbonic acid, and finally is passed out through the intestines, and also through the skin.

## SITZBATHS.

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Sitzbaths are very frequently used, and are of great advantage, because they not only withdraw the heat from the gluteal, sacral, lumbar, and pelvic regions, but also from the abdominal organs. By this process the body is also exposed, and a great deal of blood is circulated, and also the heat of the blood is greatly diminished, by the application of water in sitzbaths. Precaution should be taken, to regulate the temperature according to circumstances.

## SPECIAL REMARKS ON FEVER AND ITS TREATMENT.

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Poison, (or Miasma) can perhaps be considered as a distant cause of fever. Then follows the reaction—greater action of the heart and the lungs, and a cramp or diseased contraction of the external vessels, which prevents the retro-flow of the blood.

In consequence, a struggle breaks out between the central point and the resistance of the external vessels—after that comes a degree of unnatural heat, and a period of higher temperature.

The real cause of increasing elevation of the temperature of the blood, must be situated in the nervous system, because it shows itself as a regulator of the warm temperature of animals—only the nervous system will be able to put the oxygen as well as the combustible organic parts, in that position and condition which make both proper and fit for union. When the temperature of the blood is increased, there must have occurred a previous change in the nervous and ganglion system.

In the normal action of the nerves, a certain quantum of chemical products arise, and also a certain quantum of heat is produced. But their action increases when the great quantity of warmth has been increased, and we will find the quickened dis-



eased action of the nerves of the vessels as a symptom of the existence of the fever.

Virchow, and other physiologists, recognize that the real regulator of the warmth in the body, is situated in the nervous system. They support their view with the experiments of Bernard, according to which, cutting through the cervical part of the sympathetic nerve, into the corresponding part of the head, produces increasing warmth.

Many physiologists supposed that the centrum calorificum in the medulla oblongata, from which the Vagus nerve arises, are the location of it, and Virchow thinks that temporary weakness of the medulla oblongata and Vagus nerve, as an involuntary nerve of the motion of the heart, produces the increasing heart action, and the disturbance in the stomach in fever.

The experiment of Bernard is nothing new, but was some time ago performed by Magendie with the same results, and we know that not all nerves of the vessels arise from the sympathicus, and not all from this same part of it, but that the cerebrospinal nerve-fibres send branches to the vessels also, and that by cutting through this one nerve, we could not reach all the vaso-motor nerves of a certain part. For example a single case of surgical operation alone, can produce irritation of the nerves, and increase the temperature.

All causes of fever must in some way enter by the lungs, or through the skin, and being absorbed by the blood, either in a liquid or agaseous form, by mixture therewith, changes are produced in it, that

cause a modified action of the nervous system and its functions, or the causes may act locally, and while they reach the action of the nerves of the vessels directly, produce disturbances of the circulation, hyperaemic stagnations and inflammations, through the local irritation. To produce local disturbances in general the blood becomes changed, by receiving the product of those disturbances, which excite the whole periphery of the vaso-motor-nerves.

From the effect of quinine in intermittent fever, was determined the paralytic nature of the moderators of change of matter, and from these Traube conceived the cause of the excitement of the sympathetic nerves.

If it be true that the direct action of quinine causes irritation, then we should be able to find that it ought to retard or completely prevent the progress of all cases of fever. But we know well that quinine produces its successful effects in some certain forms of fever only; so we should look for the effect of the action of quinine, not in the nervous system, but in the blood in which the quinine has assisted in causing change.

The chilly feeling in fever, may be expressed as follows :

Through the increased action of the vaso-motor-nerves, arise the contractions of the minute vessels, and as a consequence of that, anaemia in the capillary. In the external skin there will be an insufficient amount of blood, and through the loss of warmth by atmospheric air, the contractive fibres of the skin, will be more and more contracted, and

cause complete anaemia, with stagnation at the origin of the veins, and reduction of the temperature. In consequence of this, an impression will be received from the sensory nerves upon the brain, and expressed as a chilly feeling.

Through the greater blood pressure, which takes place in the heart, the contraction of the internal capillaries will be soon overcome and general hyperaemia will set in in the internal organs, because the capillary contractions can no longer be supported by their own muscle fibres, as occurs in the case of the external skin, notwithstanding the bloodlessness of it, and especially of the mucous-membrane. At the same time the vaso-motor-nerves are still active, yet the force of the heart will overcome their action. The less contraction there is of the skin, and the more the power of the nerves becomes exhausted, the easier it will be to overpower here the contraction of the capillaries. Hyperaemia is still developed in the external skin, and in consequence of that, perspiration can take place.

According to Andreal, Gavaret and Rodier, the blood by increased warmth, becomes liable to be easily corrupted, and the red globules will be much more diminished, and the colorless globules will increase in number, and the albumen changes easier into fibrin, blood vesicles, hematin and fat, and exudations follow with increased excremental matter. According to G. Zimmermann, there is first a withdrawal of the albuminates and a diminution of combustible material followed by a formation of a larger quantity of urea and uric acid, caused by the heavier and surrounding bi and tritoxide of protein,

being changed more easily by the relative larger quantity of oxygen into urea and uric acid.

THE LATEST EXPERIMENTAL INVESTIGATIONS UPON FEVER-PROCESS AS PERFORMED UPON DOGS, BY H. SENATOR, (BERLIN,) GIVE THE FOLLOWING RESULTS.

In the majority of fever-diseases, no simple and uniform maximum of the normal change of matter occurs, but there is a larger loss of albumen, that leads to an increased formation of urea. The increased formation of urea takes place at the setting-in of the fever process, and before the outbreak of the climax of the fever temperature. As albumen is still withdrawn mostly in other shapes during the change in matter, the maximum of the loss of albumen is larger than that of the formation of urea, and in most cases therefore, amounts to much more than double. The conditions for the liberation of carbonic acid, are better during the fever heat, than during the normal. The feverish body is proportionally poor in azotic constituents, (albumen) but richer in non-azotic and carbonaceous (fat). Of azotic constituents, the greater part that are rich in potash and hematin are consumed; the blood corpuscles before all others, and then these also. The quantity of urine in fever is ordinarily governed by the supply of fluid, but stands in an unfavorable proportion to the normal amount. The quantity of water evaporated is increased in fever, and indeed much more than that of the exhaled carbonic acid. The liberation of warmth is not increased in the beginning of the fever when chilly; rather decreased. At the height of the fever, it is on an average increased. The greater part of the loss of warmth in the fever



heat, depends on the conduction and radiation, in the critical decline however, on the evaporation. The surplus warmth in the body during fever heat, can not be explained by alteration in the changes of matter, that are indicated by the resulting products, principally urea and carbonic acid. The skin during the fever has not lost its capacity to regulate the temperature of the body by changing its warmth and contents of blood. The higher temperature during fever is occasioned by the disproportion between the abnormal increased formation, and the increased liberation of warmth, though not in the same degree. At the same time the liberation at the height of the fever may be greater than normally, and occasionally even greater than the fever formation of warmth. The pyrognetic stage finds its strongest expression in the chill, the defervescent stage in the crisis. The want or setting in of perspiration does not depend on the fever-process, but on the nature of the fever diseases or individual causes, and is of no account in regulating the warmth. (*Wiener med. presse*, No. 3, 1874.)

THE MECHANICAL DOCTRINE OF FEVER, BY PROF. HUETER.

As the author has already shown on former occasions, one can examine the perturbations of the capillary bloodflow in the mesentery and web of frogs, by infecting the animals with monadic fluids. Hitherto the frog had not been used for such experiments, though Malpighi has shown the possibility of observing the bloodflow in them, by means of the microscope. The normal circulation in the frog occurs so rapidly, that the separate globules are not at all

visible, but only a single red stream is seen, flowing through the capillary vessel. In infected frogs however, the flow of blood is more or less retarded in the larger number of the alveolaric districts, while in a less number of alveolaries, the circulation remains normal.

The author concludes therefrom, that during (Infection) fever, a number of the smallest vessels are excluded from the total circulation of the body. He therefore sides with the theory of Traube and Senator, who do not explain fever from the increased production of warmth, but from decreased liberation of warmth. When Traube assumed a contraction of the small principal arteries, as being the cause of the decreased liberation of warmth, this is partial, since one can perceive, like the author, the retarded circulation, not only in the skin, but also in the lung. Those alveolar districts, in which the monades and white globules adhere, can naturally render less warmth to the air, in the interior of the alveolaries. The temperature of the body must rise in consequence thereof. (*Medical Centralblatt*, xi., 5, 6, 1873.)

The fever itself consists :

1. Of a special kind of weakness as the first effect of a distant cause, which the fever brings forth.
2. Generally cramp or contraction of the arteries, but especially those lying on the periphery, and the capillary vessels of the periphery, are a necessary consequence following through two conditional accumulation of blood in the heart and in the lungs, and
3. Showing diseased heart, and diseased concatenation of the symptom as retro-effect of these organs.

## . PROOFS .

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In keeping a patient in a warm room, or in a warm bath to the degree of 4-5 F. above the normal temperature, the pulse will soon be more frequent and approach the subjective fever phenomenon. The symptoms will not diminish before the irregular heat is reduced. Should the person remain sometime in the same warm temperature—the pulse frequently will continue the same as though he had left the room until the temperature has returned to the normal state.

An even comparison is not possible, because artificially warm air or warm bath of so high a temperature can never be obtained as in fever. In a warm bath it is difficult to increase the temperature above 100-101 degrees of F., when as usual the perspiration breaks out, the fever symptoms mostly disappear, through the perspiration, and by reducing the temperature the heat will be reduced, which is not the case in fever.

The contraction of the external vessels constitutes a very important symptom in diseases. These contractions stubbornly assert themselves, and cause a great retro-action and more so at a temperature of 104-105 degrees F.

The reduction of the fever heat to the normal state as necessary as it is—is therefore difficult and very uncertain.

While the contraction of the vessels and the perspirations are regulated, the profuse heat will disap-

pear through perceptible and imperceptible perspiration. The abnormal heat and contractions are less, the action of the heart and arteries are regulated, and sleeps sets in. In this way the heat and the frequency of the pulse is reduced.

The diseases can only be prevented in the beginning, by the use of plunge baths, at a later period it would only be beneficial so long as the same temperature is retained, but not so sure, because the body has become used to the fever.

The Hydropaths, and the best author on the hydropathic methods say, that water is an animating, an antifebrile, a derivative and tonic remedy.

1. *As an animating Remedy*, a short bath from two to five minutes of a temperature from 50-64 degrees F., provided that the body is warm before the bath, and bodily exercise is made in and after the bath. After such a bath one does not feel cold, but rather warm. The blood and nerves are invigorated, and resulting effect is fatigue and sleep.

In the pathological state, this animating condition can be obtained instead of by means of the bath, by wet rubbing, half bath and the application of water at a certain temperature.

The animated action is obtained the least by rubbing. This latter method cools only for a short time, and in an unimportant degree—more so when the body is not rubbed dry. In contrast to this, the derivative action of water can be obtained by rubbing, which creates an easy quiet and produces good sleep.

The half bath from 72-77 degrees of F., and of a duration from 5-10 minutes, produces light chills and sinks the temperature from 1-2 degrees of F. The



relative effect of these few moments is to produce small shocks to the nervous system.

The application of pouring water from 50-63 degrees of F. during 3-5 minutes, in addition to the revulsion, by rubbing, causes energetic reduction of the temperature, and considerable shocks to the nervous system.

The resulting reaction produces the return of the disordered functions of the brain and nervous system.

2. *Antifebrile remedy* which reduces the temperature.

This effect can be obtained by the application of water in any form—only external manifestations of reduction of temperature, determine in which form the applications must be made

The physician in each and every way succeeds in reducing the temperature, but he cannot prevent the increase of intense heat.

To produce this the physician must prevent the inactive state of the temperature-regulator, of the medulla oblongata and Vagus nerve, and the paralytic weakness of the brain, as the Digitalis in typhus and scarlet fever and so forth are not sufficient, and the remedies which increase the warmth and irritate the brain, such as camphor, cannot be given to limit the composition of the blood.

The first can be obtained by water if properly applied, when the animated power is methodically united with the reduction of the temperature.

The second will be produced by proper and energetic application of water of antifebrile power.

3. *As Derivative.* The excretions of the skin in Typhus, are according to Brand real crisis, and are produced in consequence of the increasing irritation.

This can be obtained by rubbing the body with wet hands in the bath, and by washing and cold applications. The skin becomes red, and eruption breaks out quickly. This method can be applied during the whole sickness, until the soreness will make further rubbing impossible.

4. *As a Tonic Remedy* through economy of general consumption, which is produced by a weakened state and long standing fever, and by which the living matter is used up.

The milder state of the fever, requires less consumption of the living matter. At the same time care should be taken of the digestion, and proper nourishment given. After the fever has moderated, half baths are recommended, besides supporting the abdomen with wet bandages.

5. *As a Local Remedy.* Wet bandages in local diseases, to quiet and soothe. The wet bandages must be large, very cold, very wet and often changed, so as not to heat the diseased part. Cold, well wrung and seldom changed, they cause irritation.

In a cold bath the external tissues of the body are cooled off to a certain degree, and the blood flows back from the surface in consequence of the contraction of the vessels, so that the blood is not, or only partly, cooled off.

After the bath, the blood flows again more freely through the extended vessels of the tissues, which latter become warm through the blood, while again from the surface, the streaming blood in the cooled tissues cools off more or less, and so will produce for a longer time a general reduced temperature. Should warmer blood continue to flow, then a period must

come where the blood from the internal organs receives as much heat, as it gave to the cooled off periphery, and instead of falling, the thermometer will remain the same for a different length of time.

BRAND'S GENERAL INDICATIONS ARE:

*a.* The brain and nervous system must be protected against the united attacks of Typhus poison, fever heat, and diseased blood.

*b.* Limiting the effect of the Typhus poison in the blood, and preventing through it their degeneration and its consequences.

*c.* Preventing the formation of early secretion of the Typhus production.

*d.* Preserving the strength, and decreasing the consumption, and

*e.* Preventing and removing local diseases.

The water will answer for all these *five* indications, as invigorating, antifebrile, derivative and tonic remedies.

## GENERAL TREATMENT WITH THE SEDATIVE METHOD.

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The object here is to moderate the heat, and decrease the frequency of the pulse. This may be accomplished in many ways, but we must select such proceedings, as may insure success, and also under whatever circumstances it may be accomplished in the easiest manner.

For this the following is recommended.

1. Wet rubbings at a moderate temperature, which are repeated frequently in succession, until the tem-

perature of the patient becomes normal, or is a little below the normal state, each succeeding rubbing can be colder, by using more water on the fresh sheet, or by using colder water, or by applying the water with a sponge, so long as the sheet is around the body. The patient must then be dried, put to bed, and supplied with the necessary applications. This proceeding must be repeated, until the desired effect is produced.

2. The application of wet sheets of a moderate temperature, from ten to twenty minutes, each succeeding application five minutes longer; in the last sheet the patient can remain, as long as he feels comfortable. In it they sometimes fall asleep. After that wet rubbings, should the heat of the body be very great; then a half bath of a higher temperature should be given, until the body is cooled off, while the head should be attended to.

3. Should the heat, with the fever phenomenon be increased, the nerve centre, especially the brain be much affected, and should the symptoms again return soon after the application of the two last proceedings, then a half bath, with washing the upper part of the body and rubbing the feet should be at once resorted to; should weakness (*Adynamia*) appear, then immediately after washing the body, water of a low temperature may be poured over it

## GENERAL TREATMENT WITH THE EXCITING METHOD.

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In cases of debility, which can be known by great prostration, considerable agitation of the brain, slow



increase of temperature, and frequent weak pulse, the exciting method must be applied.

For this the following is recommended :

1. Long wet packings of a higher temperature, from 1-2 hours, followed by very quick and cold rubbings of a low temperature, also dry frictions of the whole body, especially the feet.

2. Warm half baths of a higher temperature, pouring of cold water over the head and back, and followed by dry rubbing.

Both proceedings to be repeated if necessary.

This can be known by the high temperature of the head, face, and general increased state of action.

The stimulating art of the water cure system, has an altogether different effect, from so called excitant remedies, used in the Pharmacologia. This latter method, also shows its stimulating power by the decrease of temperature, but the former acts as an irritant, and reduces the temperature quickly, and by small degrees. Through this slow process of decreasing the temperature, the irritation of the nervous system will be diminished. There will be the quiet manifestation of increased strength. The general stimulating remedies, such as camphor, valerian, musk, wine, are incorporated with and produce an influence, by stimulating the nervous system. Notwithstanding that, the accelerated, changed process increases in the blood, and the irritation of the nervous system increases the debility, and through the irritation of the capillary vessels, the local process is heightened.

Whether the patient after these proceedings should be allowed to walk out doors, or in his room, or to be put to bed, depends upon circumstances. In the

beginning of the sickness, the patient will feel stronger after each proceeding, and in such case, he ought to be allowed, to exercise in the open air, if the weather is fair; in bad weather, exercise in his room. Should he feel weak, then he must not be allowed to exercise, but his room, should be well ventilated, and the windows should also be left open in pleasant weather, without danger of ill effect. The greatest care should be taken to have the body and bed linen clean.

## LOCAL TREATMENT.

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Between each proceeding, wet applications are to be applied to the suffering part. The principal application should be made around the body and the head, instead of the usual belt bandage, which is seldom used, because it is too troublesome to change. It is preferable to apply a wet, thick, compress over the whole abdomen, with a dry towel or sheet over it, which is folded around the stomach, and which can be easily changed if necessary.

To cool off the head, a wet towel should be tied around the same in such a manner as to bring the two ends across the forehead, or a wet compress should be applied to the back, and a second one to the front of the head. The one on the back should not be changed as often, while the one on the forehead whenever necessary. In case the feet and hands get warm too slowly, then they should be dry rubbed, and wrapped in warm towels. In case the heat in the feet and hands is too great, then a wet towel should also be applied around them.

2. The local processes that are mostly based on Hyperaemia and inflammation, will be treated in correspondence with their developed state, either by the quieting or exciting method.

The hot face should be cooled by frequent washing off with cold water; the mouth and the throat, should be especially taken care of, by using gargle of cold water, or by washing out with a clean piece of linen.

The blood is restored through nourishment and water. Nourishment should be taken often, and in as small quantities as circumstances will permit. It should only be of such quality, as will permit restitution of the blood, as speedily as possible.

For this, the following is recommended:

Milk, beef broth, soup with yolk of eggs, or light paste, bread soup, afterward light puddings, light meats but the quality should be carefully selected, because it may cause the return of sickness. Drinking a certain quantity of water of a certain temperature, has the effect of cooling off and restoring the loss of water, and relieving the hyperaemia in the indigestive organ. The crisis should not be disturbed. If the perspiration decrease or stops, then rubbing of moderate temperature should be applied, because the body is too sensitive for too low a temperature; should the perspiration not continue, then the body should be rubbed with a wet sheet, so that the skin vessels become irritated and are forced to perspire. The temperature should never be decreased too much, because production of perspiration requires a certain amount of heat.

## A SHORT REMARK ON PNEUMONIA.

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The present prevailing inflammation of the lungs (called pneumonia), induces me to add my opinion on the treatment of this disease. The severe winter brought a frequency of this disease, which is only known to this extent in the northern parts during the months of December, January, February and March. The frequent development of this disease, is caused by the high rate of barometer, (great atmospheric pressure,) high degrees of cold, great dryness of atmosphere, lower electricity and frequent north-winds, blowing over countries where there is no vegetation and no forests. Men are predisposed to this disease more than females—plethoric persons and also persons with diseased lungs. After taking cold, the predisposed is afflicted with a congestion, (Hyperaemia) of the lungs, and shortly after, follows an exudation of a fibrous, compact fluid into the cells of the lungs, called pneumonia. The most important symptom in pneumonia is therefore the high congested state of the lungs, which alone according to Dr. Rokitansky is the most frequent cause of sudden deaths, or with the following oedema. The most successful treatment is by contracting the congested vessels, and reducing the high temperature of the blood, by the proper, local and general application of water, in such a manner as to produce its antiphlogistic and sedative results, of a lowest and moderate temperature, and by derivative application of water to the lower extremities. By these pro-



ceedings the congestion of the lungs will be diminished, and less exudation take place. In the next state, in order to aid the softening and support the absorption, and expectoration of the exudation, is recommended the exciting method of the application of water, at the higher temperature, in the form of wet packing, wet bandages, wet rubbing, half baths, internal use of water and proper nourishment. By this treatment, the patient is not debilitated, but soon recovers, without ill effect.

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From all this we see, when treating diseases, we are occupied in healing the diseased change of matter, that this abnormal change of matter, can be increased or decreased, and that the qualitative deviation of nourishment is only established by quantitative conditions of the molecular adhesion and repulsion.

The increase of the abnormal diminished change of matter, can only be done, when by some circumstance which we call irritation, motion in the molecules is aroused, and these come into different positions and distances to each other, entering into numerous new combinations. By these aroused motions of change of matter in the organic parts, the introduced food will be easier combined with the constituents of the organism, and thereby cause better nutrition. With the increased formation of matter, the functions of all organs will gain strength and intensity, and hence these will gradually return to

their normal state; each positive cure can only take place in the nutritive manner.

This increased change of matter will be attained, by assisting the function of the nervous system, since this especially controls the circulation, respiration and capillary action.

By irritating the respiratory nerves, especially the vagus nerve, the breathing becomes deeper and about one-fifth part quicker; therefore the reception of oxygen is larger, by this irritation of the same nerve the motion of the heart becomes stronger, and acts about one-third slower, consequently the contact of the blood with the oxygen in the lungs, is more intense and lasting. The proportion of the circulation to the respiration is more favorable, by the excitement of the nerve centres, the nervous influence on all functions is stronger, and by exciting the vessel-nerves, the capillary bloodflow, and change of matter will be more active.

The general therapeutical remedies, which cause the motion of matter, excitants, amara, roborantia, solventia, etc., attain this result seldom or not at all, as only in very rare cases the motion of matter is controlled by them in the desired measure. For all these substances are to the greater part absorbed in the circulation, and there cause their effect. By their exciting action, their irritation extends through the whole mass of blood, and not alone rests on the nervous system of the vessels, but also on the central parts of it. By the irritation of the vessel nerves, which is a general one, the exciting effect will also be general, as well in the internal organs, as in the external skin. Hyperaemia in the vessels

and plethoric parts will appear, acting more severe on the delicate parts, and very easily causing stagnation.

Although some of these remedies, the one or the other, may act on the organic sphere, it is impossible to tell in advance, which organ and which mucous membranes are especially affected. Through the irritation of the nervous sympathicus, the breath and heart motion is accelerated, and we possess only certain remedies, which act retardingly on the latter, (as aconite, digitalis,) and which do not belong properly in the category of excitantia, and whose collateral action may be disadvantageous in a special case. The excitement of all central points of the nervous system, is sometimes not at all observed, but only that of its individual parts.

If the irritating remedies are locally applied, then they can only be used externally, and brought only in the accessible cavities, as the urethra, bladder, in the rectum, in the vagina, uterus, the throat, and perhaps also into the larynx, but not to those parts where their action would be desirable; and then it happens besides, that they are absorbed in the blood and thereby cause other disadvantageous results. Sometimes it is just the stomach and intestines which cannot stand the irritation, when such remedies generally bring on a positive local disadvantage, without causing more than a problematic advantage. The degree of irritation of these remedies, cannot be discovered until it is manifested by the consequences, which sometimes appear too late; for if the remedy is once taken in, it is very difficult to remove it

again. The duration of such an irritation cannot be determined, because the diseases in the different individuals, and after the different circumstances of the individuals, are different.

Under the application of water the case is changed. By the action of the change of temperature on the organism, we obtain sure and positive results, which are favorable to the desire and object. If we admit that each momentary decreased temperature, acts in an exciting manner on the surface of the peripheric nerves, that the excitement differs with the quickness and intensity of the decrease of temperatures, with it rises and falls, if one considers, that the irritation can quickly be diminished, and just so quickly increased, that this irritation can be repeated as often as one deems it advisable, in which the mass of blood remains untouched, there remains no doubt, that we can control this remedy better and with more certainty. This irritation differs from any other, because it principally acts on the nervous system, and increases its nutrition, without changing its chemical constituents.

The irritation can be concentrated on the different spheres of the nervous system, therefore the brain alone, the spine alone, the respiration alone, the circulation alone, and the vessel nerves can be separately controlled thereby.

Through the momentary withdrawal of warmth from the peripheric nerve ends, a change of position of the nerve-molecules takes place, as in every irritation, which extends over the whole fibres. But when the temperature has again equalized itself, the



original condition again returns. We cannot alone in general control the organic action, in applying water, but we are enabled, to point out the *degree*, the *extent*, the *location*, and the *duration* of the effect, and to conform to the individuality, which in applying internal remedies, is not the case.

The decrease of the diseased increased organic change of matter, whose principal process exists in an increased formation of warmth, ~~36-38~~ 36-38 F. above the normal state, and as it occurs in all fever diseases, with abnormal increased excitement of the entire nervous system, with increased heart and respiratory action, with hyperaemia and inflammations, and as it also appears in local disturbances without general fever symptoms, takes place directly by the diminution of the organic warmth, being the principal excitant of the organic motion.

The common Therapy diminishes the material of the organism, by the withdrawal of the organic fluids, and the food, and removes the external irritations. The water cure system, however, acts directly on the action of the organic matter, by withdrawing the warmth and soothe the irritability, and the conductivity of the nerves, and can indeed be controlled as to stop entirely any motion.

The frequency of the pulse, decreases the respiration, comes into the normal proportion to the beat of the heart, the hyperaemia is removed by the contraction of the capillaries, and also the branches of the arteries are larger, thereby decreasing the formation of stases. If we do not stop the chemical changes, which are caused by the different diseases

in the blood, as in Typhus, Exanthems, intermittent fever, and do not entirely destroy the causes, as they are only known to us in their consequences, still we can paralyze their analyzing power, by withdrawing that condition, the warmth, which is absolutely necessary for their further development.

We can replace the loss of organic matters, which the body suffers by the constant chemical changes, by new introduction of food, whose right assimilation and proper absorption is possible only in this treatment. It therefore shows itself clearly enough and requires no further proof, that the advantages of this treatment, preponderate above all others.

Even in advance states of brain and spinal diseases, the water cure system since its general application, has frequently proved its beneficial results, according to the testimonials of German and French physicians, and I myself have had the opportunity, partly in my practice, partly in the water cure institute, of treating numerous cases of disturbances of motility, beginning with <sup>ataxia</sup> and resulting in complete lameness, and which had lasted for years, curing some completely, and relieving others, in such a manner that they were enabled to make use of their limbs again to a great extent. Of course considerable time is required, as it is generally the case in such chronic diseases, but the patients are afterwards able to continue the treatment at home, if circumstances should not allow them to remain any longer in the institute. It cannot be denied, that if the water cure is improperly applied, the malady thereby may be greatly increased, and consequently some will be opposed to this method.

Heretofore in America, the use of water, as a remedy for diseases, has been mostly in the hands of men who having no physiological and pathological knowledge, as a foundation on which to cause the application, have failed totally in bringing out its true effects, and in fact, actually abused its full and beneficial use.

Before all, it remains for the physician to find out, to what degree, what extent, and of what character, if more active or atonic the disturbances are. This can be seen from the duration of the disease, the irritability of the nervous system, of the respective parts especially and greatly from the diseased symptoms; the observance of the patient after the applications of the first proceedings is here an infallible criterion, to determine the cure for the future. At the beginning of the disease, and far into its duration, the active character will make itself known in all symptoms; afterwards these will change, the moderated irritability of the nerves and muscles will be of a more passive character, and the exciting proceedings will always cause an immediate relief. From this relief, its duration and its gradual increase, it will be possible to determine the kind and intensity of the method to be applied. It of course is understood, that such fine observations cannot be expected from every person.

It is the general erroneous opinion, that water as a remedy, is merely water, and that the results of its application, no matter how or in what manner it may be done, or at what degree of temperature, it may be applied, must always be beneficial. Water,

indeed, under the direction of a physician, skilled in its application is the most potent remedy we possess, and properly administered produces good results; but like every thing else in nature, it has its positive and its negative effects. It is the good result, however, that is to be sought after, and not its hurtful abuse. But this latter is much more frequently obtained than the former, by the haphazard way in which some physicians prescribe the use of water. I have often in my own practice, met cases where the doctor himself, not knowing the proper routine in water treatment, has sent a subordinate, a so-called "rubber," to attend a patient, and this man has given him instead of a invigorating, an exhausting wash-off of an hour or more, and then packed him for either a too short or too long a time, to the great injury of the patient. These "rubbers," have several parties to attend, and while one is undergoing treatment, they leave him thus in a pack, and go to another, thus endeavoring to serve several at the same time, to their own pecuniary benefit, and to the disadvantage and harm of the patient; and some, even offer themselves independently of the advice of a physician. No wonder patients complain that the effects are not beneficial and so denounce the whole system as totally inefficient. These men are not to be blamed so much as those who send them to perform these services. These "rubbers," are ignorant of the true method of applying the cure; they do not know, that a difference even of a few degrees in temperature, and a few minutes in time, is enough to change wholly the retro-effect of the exciting or quieting application of the water used.



This custom ought to be discountenanced, since it is not only prejudicial to the true interests of those who seek relief from this water cure treatment, but also, because it is in direct opposition to the recent act of the legislature, in reference to practicing physicians.

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